

PATENT
Customer Number 22,852
Attorney Docket No. 2376.0006-01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Continuation Application for Reissue)
of U.S. patent No. 5,462,120)

Inventor: Michel Gondouin)

Application Serial No.: Unassigned)

Filed: April 4, 2001)

Group Art Unit
in Prior Application: 3625

Title: DOWNHOLE EQUIPMENT, TOOLS)
AND ASSEMBLY PROCEDURES FOR THE)
DRILLING, TIE-IN AND COMPLETION OF)
VERTICAL CASED OIL WELLS)
CONNECTED TO LINER-EQUIPPED)
MULTIPLE DRAINHOLES)

Examiner in Prior
Application: H. Dang

Honorable Commissioner of Patents
and Trademarks
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to the examination of the above application, please amend this application as follows:

IN THE ORIGINAL APPLICATION

Pursuant to the Decision of this Office dated October 8, 1999, granting Applicant's
Petition for the original filing date in parent reissue application serial no. 08/861,457, please

cancel pages 42-44 of application Serial No. 814,585, the original application leading to the '120 patent.

FILING DATE

Also pursuant to the Decision of this Office dated October 8, 1999, granting Applicant's Petition for the original filing date, please amend the INID code [22] as follows: [Filed: Jan. 4, 1993] Filed: Dec. 30, 1991.

IN THE SPECIFICATION

Please amend the specification as follows:

Col. 1, line 9, after "FIELD OF THE INVENTION" and before the first paragraph, insert the following paragraph:

This is a continuation of reissue application serial no. 08/861,457, filed on May 22, 1997.

Col. 3, lines 44-47, delete the paragraph "FIG. 3 is a vertical cross section of a special casing joint equipped with a drillable packer and retrievable whipstock for drilling and completion of the side-tracked hole of Case 3.";

Col. 4, lines 4-7, delete the paragraph "FIG. 6 is a schematic vertical cross section of a well and two drainholes, showing the various fluid levels in the reservoir.";

Replace the paragraph beginning at column 7, line 26, with the following:

Case 3 includes a special casing joint equipped with a drillable packer and retrievable whipstock for drilling and completion of a side-tracked hole. In Case 3, a vertical well is drilled, with its lower 50 ft deviated at the angle required to kick-off a horizontal drainhole and oriented in the direction selected for the drainholes. A special casing string is made-up, run-in and cemented by known techniques into the vertical and deviated portions of the hole. It consists of a shoe, a float collar and a special casing joint, see FIGS. 3a-3c, [(FIG. 3)] located at a depth slightly above that of the start of the hole deviation. This casing joint

presents an elliptical window machined into the casing with a downward orientation of a few degrees from the vertical. [The] As previously shown in Fig. 1, the window (1) is again plugged off with a drillable plate (2) made, for instance, of a soft metal and shaped to generally conform with the casing surfaces. The plug is firmly attached to the casing by means of drillable fasteners [(29)]. Its orientation is also indicated by a vertical drillable key or grove (30) in the casing joint inner surface at or near its lower end.

Replace the paragraph beginning at column 8, line 21, with the following:

After the cement has set and the cementing string has been pulled out, the outer saw-tooth groves [(38)] of the whipstock are latched into an overshot tool equipped with a milling edge to drill out the elliptical collar (35) and the whipstock is pulled out. The supporting whipstock packer (31) is also drilled out and pulled out with the overshot milling tool, which also is equipped at its lower end with a suitable packer-latching device. These operations leave full openings in both the deviated casing and the side-tracked intermediate liner. Both of them provide a relatively large deviated casing and a slightly smaller liner to be used as the respective starting points of two drainholes, in the same way as in Case 2, but the drainhole diameters and that of their respective liners may be greater than that of Cases 1 or 2.

Replace the paragraph beginning at column 11, line 36 with the following:

In under-pressured reservoirs containing low GOR oil, reservoir energy may be insufficient to convey the production stream up to a pump or gas lift valve located above the kick-off points of the drainholes. The difference in elevation between such a pump and the fluids entry points in the horizontal part of the drainholes is greater than the drainholes radius of curvature, which may be up to 500 ft. In addition, there are significant friction pressure drops through the horizontal and curved portions of small-diameter liners, which may reduce the calculated net flowing fluid head at the pump [(49)] inlet to a value below the required minimum NPSH of the pump. This indicates that cavitation is likely to occur in the pump, with highly detrimental erosion effects and a reduced flowrate. To alleviate this problem, flow from each drainhole may be directed to an oil sump (50), with the pump taking suction at or near the bottom of the sump. See FIG. 6b. The top of the sump is closed by a packer (51) a short distance above the highest kick-off point. It constitutes the apex of a kind of syphon (see [FIG. 6] FIG. 6b) for each drainhole. For very low GOR oil, frequently present in under-pressured mature reservoirs, the flowing pressure at that point may still be well above the bubble point of the production stream, so that the risk of cavitation and break-up of the de-celerating liquid stream at that point is much less than it would

be in a pump at the same location. The flowing pressure at the apex, plus the liquid head in the sump, provide a pump suction pressure exceeding the minimum NPSH required, thus eliminating the risk of cavitation in the bottom pump.

IN THE DRAWINGS

Pursuant to the condition of the Decision of this Office dated October 8, 1999, granting Applicant's Petition for the original filing date, please cancel Figs. 3 and 6 of the drawings from this application, as shown in Figs 3 and 6 in the attached Request for Approval of Drawing Changes in which the figures are enclosed within brackets (in red in the attached drawing) and identified as "CANCELED" (again in red). By these changes to Figs. 3 and 6, Applicant does not intend to cancel Figs. 3a, 3b, 3c, 6a, or 6b.

Also, please amend Figs. 4 and 10 as indicated in the attached Request for Approval of Drawing Changes.

IN THE CLAIMS:

Please cancel claims 1-7. Add new application claims 8-78.

8. A method of forming a second borehole from a first borehole comprising the steps
of:

installing a casing in at least a portion of the first borehole,

under-reaming a portion of the first borehole at the location of the second borehole to be
formed;

running a joint assembly through the casing in the first borehole and installing the
assembly at the under-reamed portion of the first borehole, said assembly including at least one

expandable portion to serve as a guide for drilling the second borehole when in an expanded state;

expanding the expandable portion of the joint assembly outward into the under-reamed portion of the first borehole;

applying settable material into the under-reamed portion and about at least the expanded portion of the joint assembly; and

drilling a second borehole along the expandable portion, when in the expanded state.

9. The method of claim 8 wherein the joint assembly includes a first tubular portion from which the expandable portion extends when placed in the expanded state and wherein during the steps of applying settable material, settable material is applied about the intersection of the first tubular portion and the expandable portion.

10. The method of claim 9 wherein a seal interface is provided between the first tubular portion and the expandable portion when in the expanded state.

11. The method of claim 8 wherein the step of under-reaming a portion of the first borehole includes removing a portion of the casing.

12. The method of claim 8 further comprising the step of hanging the joint assembly from the casing of the first borehole.

13. The method of claim 12 wherein the joint assembly is connected to the casing above the under-reamed portion of the first borehole.

14. The method of claim 12 wherein the joint assembly is fastened to the casing above and below the joint assembly.

15. The method of claim 12 wherein a seal is formed at the intersection of the joint assembly and the casing.

16. The method of claim 8 wherein the expandable portion, when expanded, forms a pressure tight seal with the remaining portion of the joint assembly.

17. The method of claim 8 wherein the expandable portion, when expanded, is oriented at a preselected kick-off angle for the second borehole.

18. The method of claim 8 wherein the expandable portion is supported during run in by a portion of the joint assembly.

19. The method of claim 8 wherein the expandable portion is guided during its outward expansion by a portion of the joint assembly.

20. The method of claim 8 wherein said expandable portion is a generally tubular member when in the expanded state.

21. The method of claim 8 wherein the expandable portion is sufficiently rigid, when expanded, to support and direct a drilling tool.

22. The method of claim 8 wherein after the expandable portion is expanded, the joint assembly provides two downwardly directed members through which two different boreholes may extend.

23. The method of claim 22 wherein each of the downwardly directed members is generally cylindrical in shape.

24. The method of claim 8 wherein an inflatable bladder covers the joint assembly and further comprising the step of filling the inflatable bladder with settable material when the

joint assembly is in the under-reamed portion of the first borehole, the settable material urging the bladder against the walls of the under-reamed portion of the first borehole.

25. The method of claim 8 further comprising the step of injecting steam into at least one of said first and second boreholes and producing oil from one or both of said boreholes.

26. The method of claim 8, further comprising clearing the joint assembly to its full bore opening to provide access for tools into the second borehole.

27. The method of claim 8 further comprising the step of running in a liner assembly through the expandable portion, when expanded, and into the drilled second borehole.

28. The method of claim 27 further comprising the step of hanging the liner assembly from the joint assembly, to complete the well.

29. The method of claim 28 further comprising the step of hanging the liner assembly from the expandable portion of the joint assembly.

30. The method of claim 27 further comprising the step of cementing the liner assembly in the second borehole.

31. The method of claim 27 further comprising the step of connecting a completion tubing in a sealed relationship with the liner assembly.

32. A method of forming a second borehole from a first borehole having casing along at least a portion of its length comprising the steps of:

under-reaming a portion of the first borehole;

running a joint assembly through the casing in the first borehole and installing the assembly at the under-reamed portion of the first borehole, said assembly including at least one

expandable member adapted to pass along with said assembly through the casing in the first borehole in an unexpanded state and adapted to be expanded into the under-reamed portion, said expandable member serving as a guide for drilling the second borehole when in the expanded state;

causing the expandable member of the joint assembly to expand outwardly into the under-reamed portion;

applying settable material into the under-reamed portion and about at least a portion of the expandable member; and

drilling a second borehole through the joint assembly and along the expanded member.

33. The method of claim 32 wherein the joint assembly includes a first tubular portion from which the expandable member extends when placed in the expanded state and wherein during the steps of applying settable material, settable material is applied about the intersection of the first tubular portion and the expandable member, when in the expanded state.

34. The method of claim 33 wherein a seal interface is provided between the first tubular portion and the expandable member.

35. The method of claim 32 wherein the step of under-reaming a portion of the first borehole includes removing a portion of the casing.

36. The method of claim 32 further comprising the step of hanging the joint assembly from the casing of the first borehole.

37. The method of claim 36 wherein the joint assembly is connected to the casing above the under-reamed portion of the first borehole.

38. The method of claim 36 wherein the joint assembly is fastened to the casing above and below the joint assembly.

39. The method of claim 38 wherein a seal is formed at the intersection of the joint assembly and the casing.

40. The method of claim 32 wherein the expandable member, when expanded, forms a pressure tight seal with the remaining portion of the joint assembly.

41. The method of claim 32 wherein the expandable member, when expanded, is oriented at a preselected kick-off angle for the second borehole.

42. The method of claim 32 wherein the expandable member is supported during run in by a portion of the joint assembly.

43. The method of claim 32 wherein the expandable member is guided during its outward extension by a portion of the joint assembly.

44. The method of claim 32 wherein said expandable member is a generally tubular member when in the expanded state.

45. The method of claim 32 wherein the expandable member is sufficiently rigid, when expanded, to support and direct a drilling tool.

46. The method of claim 32 wherein after the expandable member is expanded, the joint assembly provides two downwardly directed members through which two different boreholes may extend.

47. The method of claim 46 wherein each of the downwardly directed members is generally cylindrical in shape.

48. The method of claim 32 wherein an inflatable bladder covers the joint assembly and further comprising the step of filling the inflatable bladder with settable material when the joint assembly is in the under-reamed portion of the first borehole, the settable material urging the bladder against the walls of the under-reamed portion of the first borehole.

49. The method of claim 32 further comprising the step of injecting steam into at least one of said first and second boreholes and producing oil from one or both of said boreholes.

50. The method of claim 32, further comprising clearing the joint assembly to its full bore opening to provide access for tools into the second borehole.

51. The method of claim 32 further comprising the step of running in a liner assembly through the expandable member, when expanded, and into the drilled second borehole.

52. The method of claim 51 further comprising the step of hanging the liner assembly from the joint assembly to complete the well.

53. The method of claim 52 further comprising the step of hanging the liner assembly from the expandable member of the joint assembly.

54. The method of claim 51 further comprising the step of cementing the liner assembly in the second borehole.

55. The method of claim 51 further comprising the step of connecting a completion tubing in a sealed relationship with the liner assembly.

56. A method of forming a second borehole from a first borehole having casing along at least a portion of its length comprising the steps of:

under-reaming a portion of the first borehole;

running a joint assembly through the casing in the first borehole and installing the assembly at the under-reamed portion of the first borehole, said assembly including an expandable portion, the expandable portion passing with the joint assembly through the casing in the first borehole in an unexpanded state and being extendable to an expanded state in the under-reamed portion, the expandable portion being sufficiently rigid when in the expanded state for supporting and guiding a tool for drilling the second borehole;

expanding the expandable portion of the joint assembly outwardly into the under-reamed portion;

applying settable material into the under-reamed portion and about at least the expandable portion of the joint assembly; and

drilling a second borehole through the joint assembly and along the expandable portion, when in the expanded state.

57. The method of claim 56 wherein the joint assembly includes a first tubular portion from which the expandable portion extends when placed in the expanded state and wherein during the steps of applying settable material, settable material is applied about the intersection of the first tubular portion and the expanded portion.

58. The method of claim 57 wherein a seal interface is provided between the first tubular portion and the expandable portion, when in the expanded state.

59. The method of claim 56 wherein the step of under-reaming a portion of the first borehole includes removing a portion of the casing.

60. The method of claim 56 further comprising the step of hanging the joint assembly from the casing of the first borehole.

61. The method of claim 60 wherein the joint assembly is connected to the casing above the under-reamed portion of the first borehole.

62. The method of claim 60 wherein the joint assembly is fastened to the casing above and below the joint assembly.

63. The method of claim 60 wherein a seal is formed at the intersection of the joint assembly and the casing.

64. The method of claim 56 wherein the expandable portion, when expanded, forms a pressure tight seal with the remaining portion of the joint assembly.

65. The method of claim 56 wherein the expandable portion, when expanded, is oriented at a preselected kick-off angle for the second borehole.

66. The method of claim 56 wherein the expandable portion is supported during run in by a portion of the joint assembly.

67. The method of claim 56 wherein the expandable portion is guided during its outward expansion by a portion of the joint assembly.

68. The method of claim 56 wherein said expandable portion is a generally tubular member when in the expanded state.

69. The method of claim 56 wherein after the expandable portion is expanded, the joint assembly provides two downwardly directed members through which two different boreholes may extend.

70. The method of claim 69 wherein each of the downwardly directed members is generally cylindrical in shape.

71. The method of claim 56 wherein an inflatable bladder covers the joint assembly and further comprising the step of filling the inflatable bladder with settable material when the joint assembly is in the under-reamed portion of the first borehole, the settable material urging the bladder against the walls of the under-reamed portion of the first borehole.

72. The method of claim 56 further comprising the step of injecting steam into at least one of said first and second boreholes and producing oil from one or both of said boreholes.

73. The method of claim 56, further comprising clearing the joint assembly to its full bore opening to provide access for tools into the second borehole.

74. The method of claim 56 further comprising the step of running in a liner assembly through the expandable portion, when expanded, and into the drilled second borehole.

75. The method of claim 74 further comprising the step of hanging the liner assembly from the joint assembly to complete the well.

76. The method of claim 75 further comprising the step of hanging the liner assembly from the expandable portion of the joint assembly.

77. The method of claim 74 further comprising the step of cementing the liner assembly in the second borehole.

78. The method of claim 74 further comprising the step of connecting a completion tubing in a sealed relationship with the liner assembly.

REMARKS

Reissue Applicant Michel Gondouin through his filing of a cover sheet, application papers, and a Preliminary Amendment is presenting in this continuation reissue application claims 8-78. The specification has been specifically amended to indicate that this is a continuation of Reissue Application Serial No. 08/961,457, which is presently pending before this Office. Applicant has also canceled original patent claims 1-7, because those claims are pending in the parent reissue application. Accordingly, the status of all patent claims and claims added during the pendency of this reissue is that original patent claims 1-7 are canceled and claims 8-78 have been added and are pending.

Claims 8-78 are fully supported by Applicant's disclosure. Each claim is directed, inter alia, to a method of forming a second borehole from a first borehole, that is cased. In each claim a portion of the first borehole is under-reamed at the location of the first borehole to be formed. The method includes the steps of running a joint assembly through the casing of the first borehole, installing the joint assembly at the under-reamed portion of the first borehole, expanding an expandable portion of the joint assembly outward into the under-reamed portion of the first borehole, applying settable material into the under-reamed portion and about at least the expanded portion of the joint assembly, and drilling a second borehole along the expanded portion, when in the expanded state. The expanded portion serves as a guide for drilling the second borehole. Applicant discloses one embodiment of the invention in case 4a and the associated drawing at Fig. 10. The casing patch or joint assembly of case 4a has close similarities to the joint assembly of case 4, as taught by the patent. *See, e.g.*, 16:17-23. In case 4

and Fig. 4, the casing joint assembly is run into the well as part of a casing string. Given the remaining close similarities, the relevant disclosures of both cases 4 and 4a are at times referenced in the following discussion regarding support.

For instance, Applicant discloses installing casing in at least a portion of the first borehole and under-reaming a portion of the first borehole at the location of the second borehole to be formed as claimed in claim 8. *See, e.g.*, 8:47-49, 57-62; 16:11-13. Applicant further discloses running a joint assembly through the casing in the first borehole and installing the assembly, which includes at least one expandable portion to serve as a guide for drilling the second borehole, at the under-reamed portion of the first borehole. *See, e.g.*, 16:17-41; 49-52. Also, Applicant discloses expanding the expandable portion of joint assembly outward into the under-reamed portion of the first borehole, and applying settable material the under-reamed portion and about at least the expanded portion of the joint assembly. *See, e.g.*, 8:58-64; 16:17-28; 38-41. Further, a second borehole may be drilled along the expandable portion, when in the expanded state. *See, e.g.*, 8:57-62; 9:13-18; 16:17-23; 49-52. Thus, independent claim 8 is fully supported by Applicant's disclosure.

Independent claim 32 is likewise fully supported. For instance, Applicant discloses under-reaming a portion of the first borehole having casing along at least a portion of its length. *See, e.g.*, 8:57-62; 9:4-8; 16:11-13. Applicant further discloses running a joint assembly through the casing in the first borehole and installing the assembly at the under-reamed portion of the first borehole, wherein the assembly includes at least one expandable member adapted to pass along with the assembly through the casing in the first borehole in an unexpanded state and adapted to

be expanded into the under-reamed portion as claimed in claim 32. *See, e.g.*, 16:13-41. The expandable member may serve as a guide for drilling the second borehole when in the expanded state. *See, e.g.*, 8:57-62; 16:17-23; 49-52. Applicant also discloses that the casing joint assembly may be expanded outwardly into the under-reamed portion of the first borehole and settable material may be applied into the under-reamed portion and about at least a portion of the expandable member. *See, e.g.*, 8:58-64; 16:17-28; 38-41. A second borehole may also be drilled along the expanded portion of the casing joint assembly. *See, e.g.*, 8:57-62; 9:13-18; 16:17-23; 49-52. Thus, claim 34 is fully supported.

Similarly, independent claim 56 is also supported by Applicant's disclosures. For instance, Applicant discloses under-reaming a portion of the first borehole. *See, e.g.*, 8:57-62; 9:4-8; 16:11-13. Applicant also discloses running the joint assembly through the casing in the first borehole and installing the assembly at the under-reamed portion of the first borehole. *See, e.g.*, 16:13-41. The assembly may include an expandable portion, which passes with the joint assembly through the casing in the first borehole in an unexpanded state and is extendable to an expanded state in the under-reamed portion. *See, e.g.*, 16:13-41. The expandable portion may be sufficiently rigid when in the expanded state for supporting and guiding a tool for drilling the second borehole. *See, e.g.*, 8:57-64; 16:17-23. Applicant further discloses expanding the expandable portion of the joint assembly outwardly into the under-reamed portion and applying settable material into the under-reamed portion and about at least the expandable portion of the joint assembly. *See, e.g.*, 8:58-64; 16:17-28; 38-41. As Applicant discloses, a second borehole may be drilled through the joint assembly and along the expandable portion, when in the

expanded state. *See, e.g.*, 8:57-62; 9:13-18; 16:17-23; 49-52. Claim 56 is also, therefore, fully supported.

Applicant's claims dependent from independent claims 8, 32 and 56 are likewise fully supported. For instance, the joint assembly may include a first tubular portion from which the expanded portion or expandable member extends when placed in the expanded state and wherein settable material is applied about the intersection of the first tubular portion and the expandable portion or expandable member, as claimed in claims 9, 33, and 57. *See, e.g.*, 8:57-65; 16:17-30; Figs. 4 and 10. And a seal interface may be provided between the first tubular portion and the expandable portion or expandable member, when in the expanded state, as claimed in claims 10, 34, and 58. *See, e.g.*, 9:2-3, 8-10; 16:17-23.

Applicant further discloses that the step of under-reaming a portion of the first borehole may include removing a portion of the casing as claimed in claims 11, 35, and 59. *See, e.g.*, 8:47-49, 57-62; 16:11-13; Fig. 10. In addition, Applicant discloses hanging the joint assembly from the casing of the first borehole as claimed in claim 12, 36, and 60, including from at least the casing above the under-reamed portion of the first borehole as well to the casing above and below the joint assembly as claimed in claims 13, 37, and 61 and claims 14, 38, and 62, respectively. *See, e.g.*, 8:64-65; 16:13-16; Fig. 10. Moreover, Applicants discloses that a seal may be formed at the intersection of the joint assembly and the casing, as claimed in claims 15, 39, and 63. *See, e.g.*, 16:23-28.

Applicant also discloses that the expandable portion or expandable member, when expanded, forms a pressure tight seal with the remaining portion of the joint assembly, as

claimed in claim 16, 40, and 64. *See, e.g.*, 7:67; 8:1-20, 57-64; 9:2-3, 8-10; 16:17-23. Applicant further discloses that the expandable portion or expandable member, when expanded, is oriented at a preselected kick-off angle for the second borehole, as claimed in claims 17, 41, and 65. *See, e.g.*, 8:54-57; 16:17-23. Likewise, Applicant discloses that the expandable portion or expandable member is supported during run in by a portion of the joint assembly, as claimed in claims 18, 42, and 66, and guided during its outward expansion by a portion of the joint assembly, as claimed in claims 19, 43, and 67. *See, e.g.*, 8:62-64; 16:17-23, 28-31.

Applicant also discloses that the expandable portion or expandable member may be generally tubular member when in the expanded state, as claimed in claims 20, 44, and 68 (*see, e.g.*, 8:62-64; 16:17-23; Figs. 4 and 10) and may be sufficiently rigid, when expanded, to support and direct a drilling tool, as claimed in claims 21 and 45 (*see, e.g.*, 8:57-62; 16:17-23, 49-51).

Applicant also discloses that after the expandable portion or expandable member has been expanded, the joint assembly may provide two downwardly directed members through which two different boreholes may extend, as claimed in claims 22, 46, and 69. *See, e.g.*, Figs. 4 and 10. Applicant further discloses that the downwardly directed members may be generally cylindrical in shape, as claimed in claims 23, 47, and 70, *see, e.g.*, 8:62-64; 16:17-23; Figs. 4 and 10.

Applicant also discloses that an inflatable bladder may cover the joint assembly and that the inflatable bladder may be filled with settable material when the joint assembly is in the under-reamed portion of the first borehole, the settable material urging the bladder against the walls of the under-reamed portion of the first borehole, as claimed in claims 24, 48, and 71. *See, e.g.*, 17-28, 38-41. Applicant also discloses that steam may be injected into at least one of said first and

second boreholes and producing oil from one or both of said boreholes, as claimed in claims 25, 49, and 72. *See, e.g.*, 14: 9-12, 26-31; 15:2-7. In addition, Applicant discloses clearing the joint assembly to its full bore opening to provide access for tools into the second borehole, as claimed in claims 26, 50, and 73. *See, e.g.*, 9:13-18; 16:49-52; 16:17-23, 41-44, .

Similarly, Applicant discloses running a liner assembly through the expandable portion or expandable member, when expanded, and into the drilled second borehole, as claimed in claims 27, 51, and 74. *See, e.g.*, 9:10-13, 19-23; 16:49-53. Applicant further discloses that the liner assembly may be hung from the joint assembly, including the expandable portion or expandable member of the joint assembly, to complete the well, as claimed in claims 28, 29, 52, 53, 75, and 76. *See, e.g.*, 9:19-23; 16:49-53. Likewise, Applicant discloses cementing the liner assembly in the second borehole, as claimed in claims 30, 54, and 77 (*see, e.g.*, 21-23, 16:49-53), and connecting a completion tubing in a sealed relationship with the liner assembly, as claimed in claims 31, 55, and 78 (*see, e.g.*, 9:10-13, 28-36; 16:49-53).

For at least the reasons stated above, Applicant respectfully submits that all of his claims are fully supported by his disclosure.

Applicant is also presenting proposed amendments to Figs. 4 and 10. These proposed amendments were discussed during an interview with the Examiner in the parent application and were presented at the Examiner's request, set forth in an Office Action dated December 7, 2000, in the parent application. During the interview, Applicant and the Examiner discussed the original patent disclosure and drawings. These proposed drawing changes were attached to the Interview Summary dated February 7, 2001. As the Examiner acknowledged in the Interview

Summary, the proposed changes to the drawings are supported by Applicant's disclosure.

Applicant fully describes the operation of liner stubs (39) and the inner and outer guides (42) and (41). *See, e.g.*, 7:67; 8:1-11, 54-67; 9:1-19; 16:17-44; Fig. 3A.

For instance, Applicant describes how the liner stubs are supported during run-in and guided during its outward expansion by inner guides and outer guides. *See, e.g.*, 8:62-64; 16:28-31. Applicant describes that the outer guide (41) is fixed to the casing and the inner guide (42) is mobile and slides within the fixed guide over only half of the stub (39) extension, while providing a cantilevered sliding internal support to the extended stub. *See, e.g.*, 8:64-67; 9:1; 16:28-31. Applicant also describes that the liner stub has drillable collar (35) and gasket (36), *see, e.g.*, 9:1-2; 16:17-23, 41-43, which he further describes in reference to Case 3 and shows in Fig. 3A. *See, e.g.*, Fig. 3A; 7:67; 8:1-11. Applicant explains that the liner stub and the collar are machined to conform with the window. *See, e.g.*, 9:8-10. This description, as well as other portions of Applicant's disclosure, fully supports Applicant's proposed drawing changes.

Applicant is formally submitting the proposed drawing changes in the accompanying Request for Approval of Drawing Changes. These drawings are the same as the drawings considered and accepted by the Examiner in the parent case. Applicant submits that these proposed drawings fully comply with the Office's Rules and the MPEP.

The MPEP instructs that the "provisions of 37 CFR § 1.121(b)(3) govern the manner of making amendments to the drawings in a reissue application." MPEP § 1413. According to 37 CFR § 1.121, "[a]ny change to the patent drawings must be by way of a new sheet of drawings with the figures identified as 'amended.'" § 1.21(b)(3)(i). Section 1.121 further explains "where a

change to the drawing is desired, a sketch in permanent ink showing proposed changes in red" must be filed. § 1.21(b)(3)(ii).

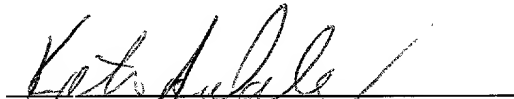
Applicant's proposed changes have been submitted on new sheets of drawings with Figs. 4 and 10 identified as "amended." Further, Applicant's submission constitutes a sketch in permanent ink and the proposed changes have been shown in red. Thus, Applicant's proposed drawing changes fully comply with the Rules. Since these changes are fully supported by Applicant's disclosure as discussed above, Applicant respectfully requests approval of these changes. Upon receiving approval, Applicant will submit formal drawings.

Pursuant to the condition of the Decision of this Office dated October 8, 1999, granting Applicant's Petition for the original filing date in the parent application, Applicant has canceled figures 3 and 6. The changes to these drawings have been made in accordance with the procedures set forth for reissue applications in Section 1413 of the M.P.E.P. According to that section, the original drawings are enclosed within brackets (shown in red) and identified as "CANCELED" (again in red).

Each of the pending claims is believed to be patentable and in condition for allowance.

Applicant respectfully requests examination of this application and early allowance of the pending claims.

Respectfully submitted,



Date: April 4, 2001

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Continuation Reissue Application)
of U.S. Patent No. 5,462,120)

Inventor: Michel Gondouin)

Application Serial No.: Unassigned)

Filed: April 4, 2001)

Group Art Unit
in Prior Application:3625

Title: DOWNHOLE EQUIPMENT, TOOLS)
AND ASSEMBLY PROCEDURES FOR THE)
DRILLING, TIE-IN AND COMPLETION OF)
VERTICAL CASED OIL WELLS)
CONNECTED TO LINER-EQUIPPED)
MULTIPLE DRAINHOLES)

Examiner in Prior
Application: H. Dang

Honorable Commissioner of Patents
and Trademarks
Washington, D.C. 20231

REQUEST FOR APPROVAL OF DRAWING CHANGES

Pursuant to 37 C.F.R. § 1.121, Applicant requests approval of the attached drawing changes. Applicant has submitted these changes by way of a new sheet of drawings with Figs. 4 and 10 identified as amended. 37 C.F.R.. § 1.121(b)(3)(i). Moreover, these drawings constitute a sketch in permanent ink and the proposed changes are shown in red. 37 C.F.R. §

1.121(b)(3)(ii).

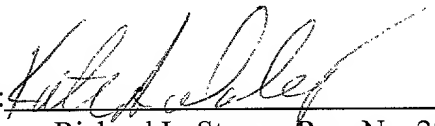
Applicant also requests that Figs. 3 and 6 be canceled in total according to reissue practice. As M.P.E.P. § 1413 requires, the original Figs. 3 and 6 are enclosed within brackets (in red on the attached drawings) and identified as "CANCELED" (again in red).

Upon receiving approval of these drawings, Applicant will submit formal drawings.

Respectfully submitted,

Date: April 4, 2001

By:


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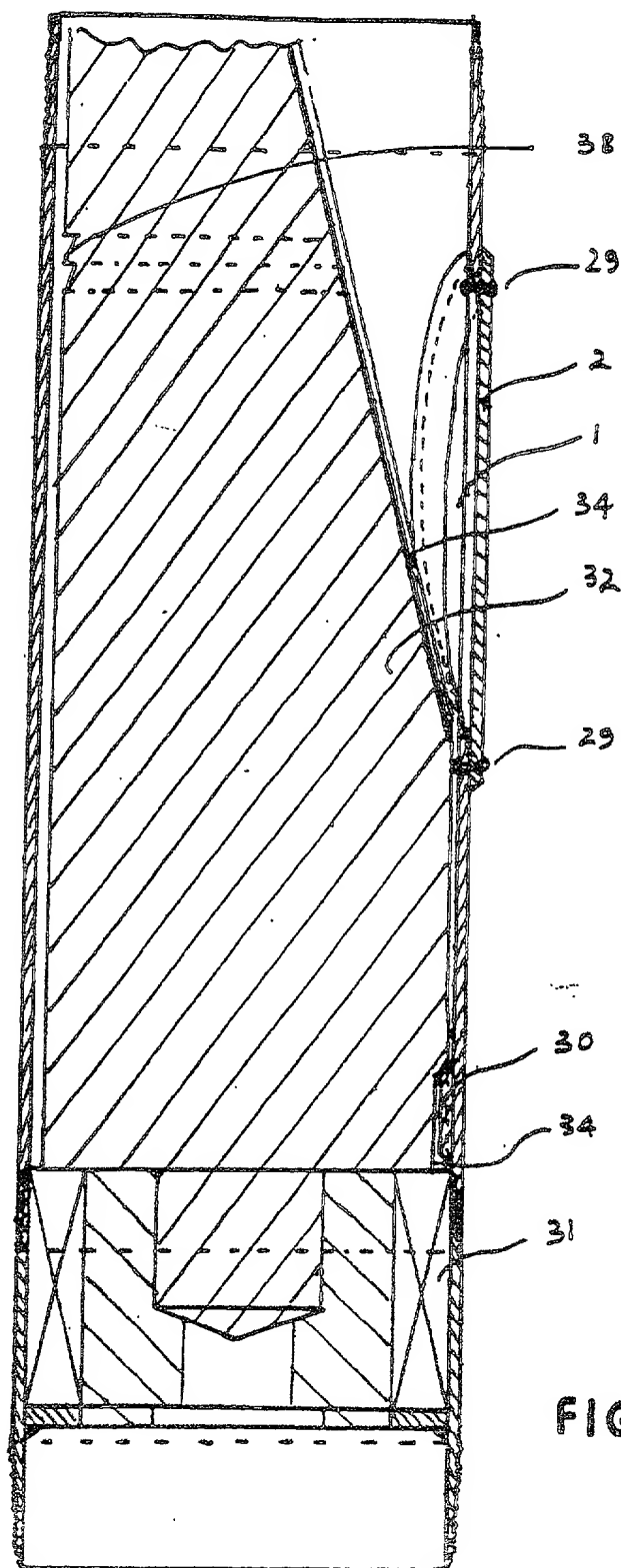


FIG. 3

(CANCELED)

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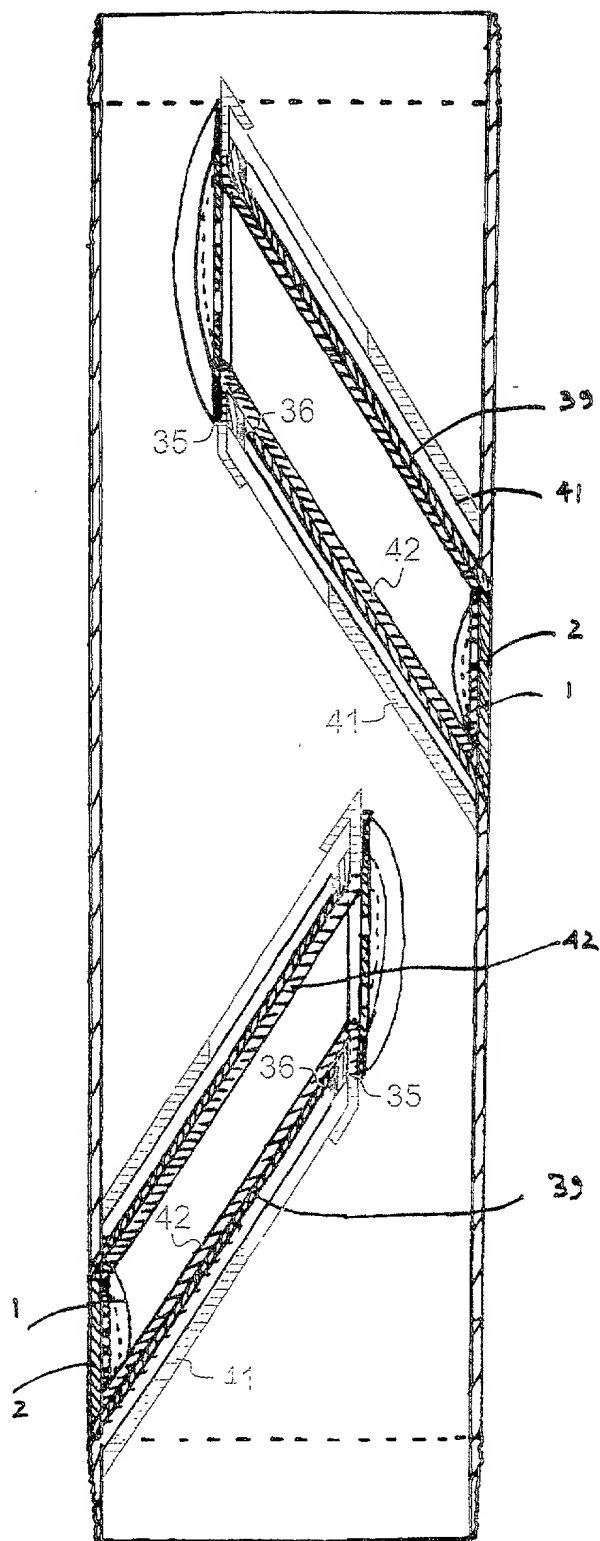
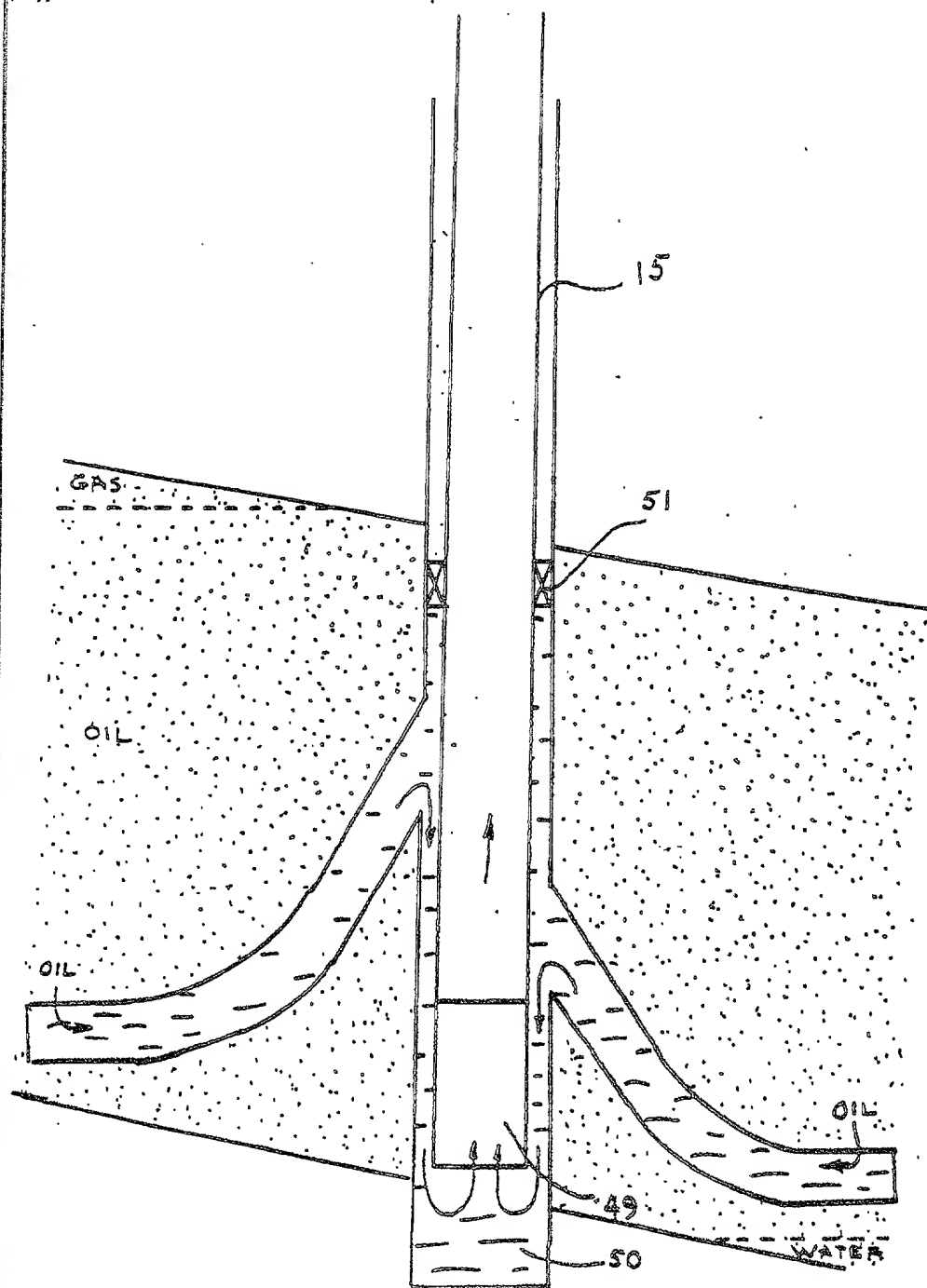


FIG. 4
(Amended)



(CANCELED) FIG. 6

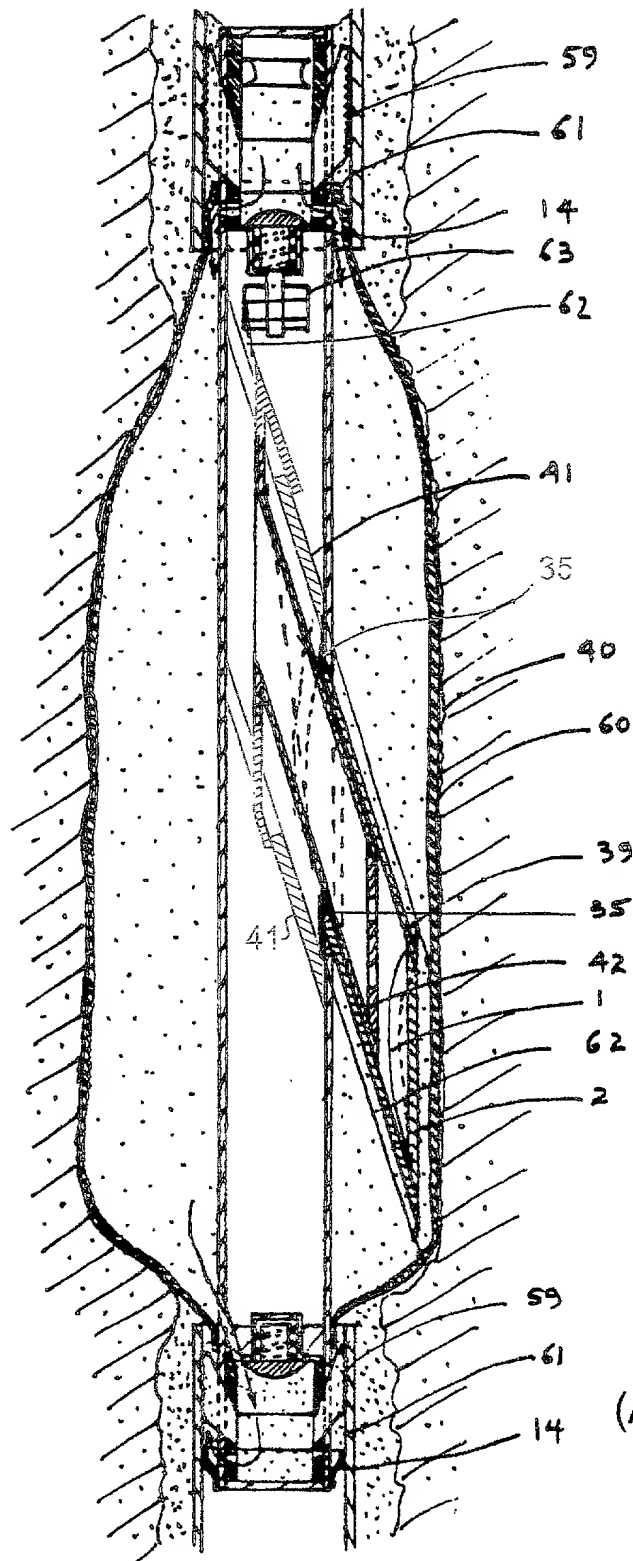


FIG.10
(Amended)